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THIS IS UNEVALUATED INFORMATION

SOURCE Radio, No 4, 1949. (42/49T106)A CRYSTADYNE (CRYSTAL SET) ATTACHMENT

Ye. Stepanov

Amateurs possessing crystal sets can increase the range and volume of recep-
 tion by adding an amplifier with an oscillating crystal (crystadyne) to their re-
 ceiver.

An amplifier of this type does not require radio tubes or high-voltage batter-
 ies and is simple to make. The only difficulty may be in obtaining the zincite
 crystal (zinc oxide), which is rarely seen on sale. An amplifier of this type does
 not work so well with other crystals.

The amplifier can be made as a separate attachment mounted in a 100 x 80 x 50
 millimeter box. Two small pocket-flashlight batteries connected in series are
 placed inside the box. The crystal holder must be cushioned by setting it on a
 rubber sheet or by suspending it on springs. /See appended circuit diagram/

The crystal for this attachment can be of the usual construction. The impor-
 tant point is that it be tuned conveniently (to select a sensitive point) and that
 the pressure of the spring on the crystal be adjustable. A steel spiral of 0.15-
 millimeter wire with a pointed end will serve the purpose and can be made from a
 field telephone cable.

To obtain greater volume it is desirable to use an external antenna about 40
 to 50 meters long. It is also possible to use the lighting network as an antenna
 by connecting one of the wires through a mica condenser of about 500 microfarads
 to the antenna terminal of the crystal set. In the latter case, it is necessary
 to avoid switching the receiver on and off the network too frequently since the
 current shocks thus produced will damage the crystals of both the receiver and the
 attachment.

The attachment is not difficult to operate. Having switched on the receiver,
 one finds a sensitive point on its crystal (if the receiver crystal has a fixed
 point, it is necessary to adjust only the attachment crystal). To find the

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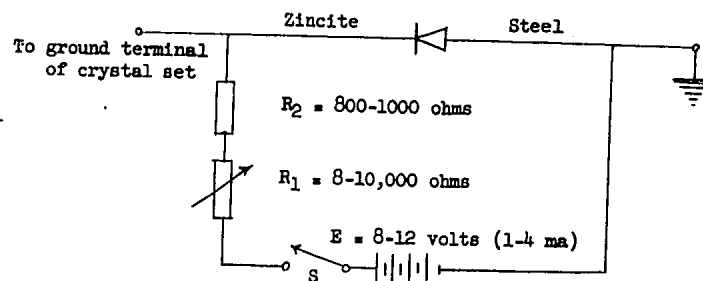
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oscillating point on the zincite crystal, the variable resistor R_1 is cut out completely, i.e., full voltage is applied to the crystal. When a loud rushing noise, or whistling in the case of a local radio station, is evident, it can be assumed that the oscillating point has been found. Then it is necessary to gradually insert the variable resistor R_1 into the circuit until the purest and loudest transmission is obtained. If this does not give adequate volume, it is necessary to find a new oscillating point which will give good amplification.

The receiver and attachment should be tuned at the same time. If, during this time, oscillations cease, the pressure on the spiral spring should be altered without shifting it to a new place on the crystal. Usually, this restores the oscillations. Sometimes oscillations will not start again due to the excessive voltage on the crystal. In this case, the voltage should be lowered through R_1 while searching for a new point. A change-over switch may be included to make possible a comparison of the receiver performance with and without the attachment.

[Diagram follows.]



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